



LITEQ 500 System

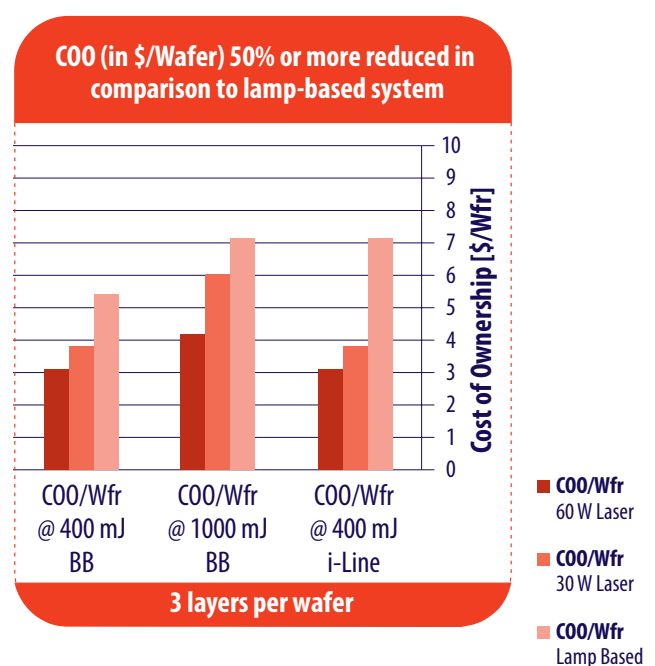
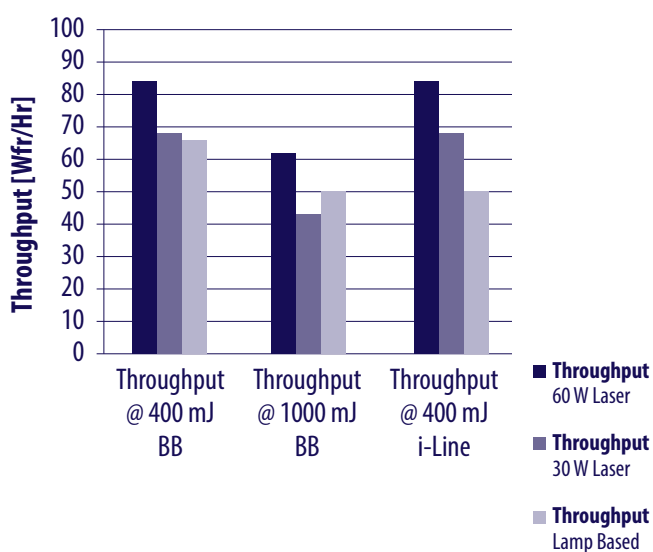
**Lithographic System for
Advanced Packaging Applications**

Designed for the future of **Advanced Packaging**



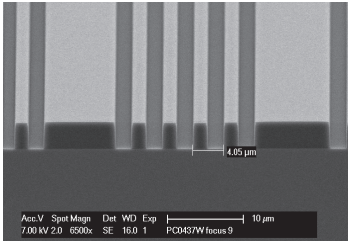
The K&S Lithography team makes a breakthrough in Lithography for Advanced Packaging by developing a dedicated solution, bringing a major reduction in Cost of Ownership

Highest Throughput and COO reduction by a factor of 2*

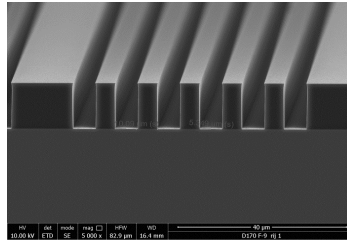


* Weighted average of full wafer exposure jobs covering a range of typical die sizes

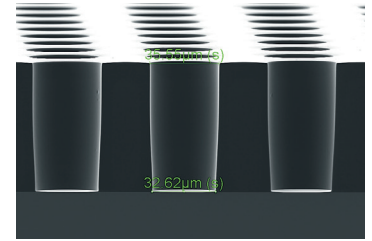
Features and Benefits LITEQ 500 System



2 µm L/S in 3.5 µm Photo Resist

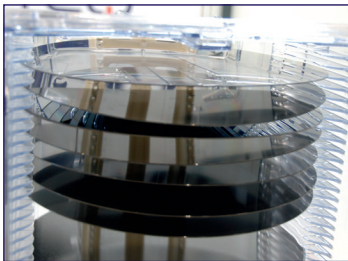


5 µm L/S in 15 µm Photo Resist



30 µm VIA in 68 µm Photo Resist

Special Handling options for high warpage substrates



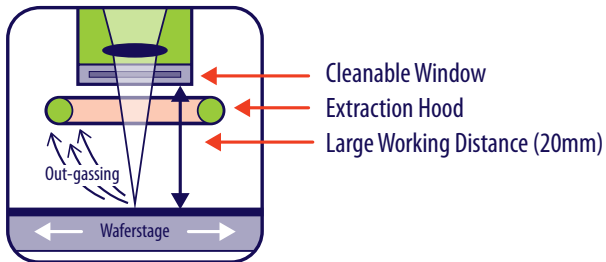
Laser based light source

- High, scalable throughput
- Enables Cost of Ownership reduction by a factor of 2

Innovative optical design and metrology

- Cost effective lens design
- Better than 2 µm resolution system now available.
1 µm capable system under development

Effective Control of Contamination from Outgassing



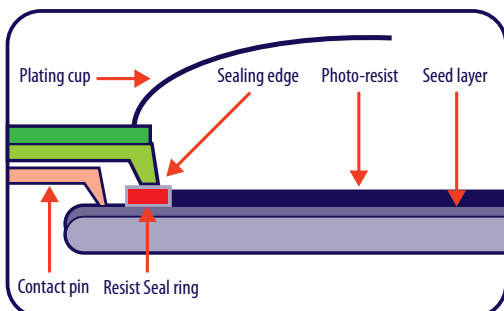
State-of-the-art and proven handling and stage technology

- Delivers high throughput and reliability
- Suitable for different materials, high substrate thickness range and high warpage
- Panel handling capability under development

Additional functionality for Advanced Packaging

- Effective control of contamination from resist outgassing
- Flexible Wafer Edge Exposure (WEE) and Wafer Edge Protection (WEP) with minimum throughput impact

Wafer Edge Exposure and Protection functions to create EBR and Resist Seal Ring



Modular system architecture

- Provides flexible factory configuration
- Enables upgradeability in the field

Differentiating software

- Model driven software delivers high reliability and upgradeability in the field
- PeerGroup® user control and automation software provides reliability and ease of use

Technical Specifications

LITEQ 500 System

The LITEQ 500 System comes in 2 versions:

LITEQ 500A with 30 W laser

LITEQ 500B with 60 W laser

Lens and Illuminator

Wavelength:	355 nm
Numerical Aperture:	0.128
Resolution:	< 2 μm
Usable Depth of Focus:	> 15 μm at 2 μm Lines and Spaces (with 10 % CD control)
Field Size / Magnification:	52 x 33 mm / 1x
Illumination Intensity:	> 2000 mW/cm ² with 60 W laser > 1000 mW/cm ² with 30 W laser
Illumination non-Uniformity:	< 3 %
Illuminator Mode:	Conventional with $\sigma = 0.55$

Wafer handling

Interface:	Double 300 mm FOUP
Wafer Thickness range:	0.4 – 2 mm
Wafer Warpage:	Handling of 2 mm warpage (in standard configuration) or 5 mm (with optional High Warpage Wafer Handling) is attainable; actual performance depends on warpage shape and material properties

Overlay

Matched Machine Overlay:	< 500 nm Matched to LITEQ system or Front-End system
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Reticle Handling

Interface:	up to 3 SMIF pods; each can hold one or six reticles
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Production Throughput on 300 mm wafers

Production conditions:	Using Global Alignment with 2 marks, Field-by-Field leveling, 40 full field exposures, no Wafer Edge Exposure
Throughput at 400 mJ/cm ² :	> 95 wafer per hour with 60 W laser > 75 wafer per hour with 30 W laser
Throughput at 1000 mJ/cm ² :	> 70 wafer per hour with 60 W laser > 48 wafer per hour with 30 W laser

WEE and WEP (both optional)

WEE and WEP width:	Adjustable between 1 and 3 mm Accuracy ± 0.2 mm
Throughput impact:	WEP negligible WEE < 10%

New LITEQ systems are currently under development, including 1 micron resolution capability and panel handling

Specifications can be subject to change without notice
